Final Report
APPENDICES
of the
Maternal Newborn Steering Committee

Hamilton Niagara Haldimand Brant
Local Health Integration Network

September, 2007

Ontario

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Appendix A

HNHB LHIN MATERNAL AND NEWBORN HEALTH STEERING COMMITTEE TERMS OF REFERENCE

Purpose

The Maternal and Newborn Health Steering Committee will provide recommendations for the optimal organization of maternal and newborn services in the LHIN to the HNHB LHIN.

Goal

The goal is to formulate a "preferred future" for maternal and newborn services that reflects a) the values of communities; b) an understanding of the issues, resources and best evidence about which practices, models and approaches have a positive health outcome for women and their families; and c) feasible and implementable improvements.

Objectives

Identify the current state of maternal and newborn care in the HNHB LHIN

- Identify existing and potential mechanisms that could respond to service and quality gaps/health system improvement opportunities within the sector e.g. information and communication technology, knowledge transfer, partnerships, among others
- Propose transition plans and evaluation strategies
- Link with other local, regional or provincial networks with similar objectives, where appropriate.

Deliverable

A report to the HNHB LHIN on the preferred state of maternal newborn services in the LHIN, inclusive of potential strategies and requirements of LHIN wide leadership and commitment for goal achievement.

Authority

The Steering Committee is advisory to the HNHB LHIN, responsible for making recommendations to the LHIN on the preferred state of maternal and newborn services in the LHIN.

Membership

Membership will a) reflect the continuum of care for maternal and newborn services; b) the LHIN's diversity; and c) comprise 8-10 individuals who bring knowledge and insight on the range of providers, policies and finders in the sector, the opportunities for improvement, and the necessary collaborative skills to facilitate the achievement of the Purpose.

Decision Making

Decision making will optimally be by consensus. In the event that consensus cannot be achieved, the majority (51%) vote will prevail.

Meetings
Monthly meetings or at the call of the Chair.

Agendas and Meeting Records
Agendas will be consistent with the Project path and will be approved by the Chair, with input from members and Staff, using standard format and will be distributed at least seven (7) days prior to meeting.

Appendix B

HNHB LHIN MATERNAL AND NEWBORN STEERING COMMITTEE

Chair
Karyn Kaufman
Professor Emeritus, McMaster University

Committee Members:
Sharon Dore
Advanced Practice Nurse,
Hamilton Health Science & CWONN Co-Chair

Bonnie King
Family Health Manager,
Hamilton Public Health Unit

John Lamont
Professor Emeritus, McMaster University

Rory McDonagh
Chief of Obstetrics,
St. Joseph's Health Care

RoseAnne Maracle-Ringuette
Program Coordinator,
Health Promotion Division, Haldimand & Norfolk Health Unit

Barbara Miller
Manager, Maternal Child Program,
Brant Community Healthcare System

David Price
Chair of Family Medicine, McMaster University

Judy Shearer (LHIN 3 rep)
Clinical Director,
Childbirth Program,
Grand River Hospital Corporation

Johan Viljoen
Regional Chief of Obstetrics, Niagara Health System

Laura Williams
Outreach Program Coordinator,
De dwa da dehs nyes,
Aboriginal Health Centre, Hamilton/Brantford

Appendix C

METHODOLOGY

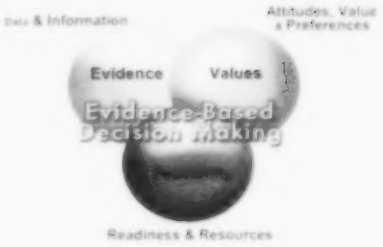
- **Values** of the community
- **Evidence** as to which practices, models and approaches have a positive health outcome for women and their families and an understanding of the issues and resources present
- **Feasible** and supported local improvements

Appendix C

METHODOLOGY

The committee's recommendations and preferred state were to reflect:

- **Values** of the community
- **Evidence** as to which practices, models and approaches have a positive health outcome for women and their families and an understanding of the issues and resources present
- **Feasible** and implementable improvements



The Steering Committee's objectives:

- To identify the current state of maternal and newborn care in the HNHB LHIN;
- Identify existing and potential mechanisms that could respond to service and quality gaps/initiate health system improvements within the sector;
- Propose transition or evaluation strategies; and
- Link with other local, regional or provincial networks with similar objectives.

The LHIN recognized that maternity care involves health professionals from across health sectors, i.e. primary care and public health. As such, the Steering Committee's membership included experts across the continuum of maternal and newborn care (obstetricians, family health teams, hospital administrators, midwives and public health staff) and reflected the diverse geography and communities of the LHIN.
For the purposes of managing expectations of this Committee the HNHB LHIN defined the scope of the Maternal and Newborn continuum from confirmation of pregnancy though to six weeks post-partum (both for mother and baby).

The Steering Committee considered data from multiple sources to support its recommendations:

- A review of published literature on maternity care strategies
- Administrative and Epidemiological data
- Engagement of LHIN experts in maternity care
- Hospital resource survey
- Inventory of local maternity care resources/programs
- Review of maternity care issues and strategies from other LHINs
  Secondary Review

Decision Making Framework
The Steering Committee agreed to complete its deliberations and submit a final report to the LHIN Board by September 2007. Three Steering Committee face-to-face meetings were held between April and August 2007.

Reaching Consensus
The Committee agreed that every member has a stake in decisions, consensus does not mean 100% agreement but that a process to resolve disagreements to the extent that consensus can be achieved. The terms of reference identified that if consensus could not be achieved, a majority defined by 51% of Committee members vote would prevail. The quorum of 51% excludes ex-officio members.

Recognition of Linkages
The Steering Committee recognized that HNHB LHIN and Waterloo Wellington shares maternity care populations that are mobile and patient choice plays a key role in the location of where women deliver their babies. To ensure inclusive planning, the committee included representation from Waterloo Wellington LHIN and a representative linked to a regional neonatal nursing network that crosses LHIN boundaries.

In addition to informing the steering committee, the summary of the qualitative data was shared with the participants at a regional maternity care retreat in March 2007, organized by leadership in the sector striving to create a regional maternal newborn partnership.

Published Literature
The literature search was restricted to reports relevant to maternity care strategy and health policy published in Canada and when available, Ontario-specific. Additional articles about diverse populations, social determinants of health and gender-based analysis were also considered.

Administrative and Statistical Data
Three initial questions were asked of administrative and epidemiological data:

- Who is having babies?
- Who is providing birthing services?
- Are babies being born healthy?

Further data inquiries were made by the Steering Committee to obtain information on:

- Maternal and Neonatal Transfers
- Intervention rates that include inductions, caesarean sections
- Maternal and Neonatal readmission rates
- Public health data regarding breastfeeding initiation, pregnancy loss and teen pregnancy rates

The Committee linked with CritiCall, the Ministry of Children and Youth's Healthy Babies Health Children Program, the Ministry of Health and Long Term Care's Midwifery Program and local Public Health Units to obtain data on maternity care within the LHIN.

Hospital Survey
Surveys were sent to all ten HNHB LHIN hospitals that provide maternity care. This information was used to create an inventory of intrapartum resources across the LHIN, including the range and number of health professionals affiliated by site, gender and age splits, models of care, number of maternity beds, delivery rooms and nursery details.

Inventory of Local Maternity Care Resources/Programs
Public health data was used to determine where prenatal, birthing and post partum services are offered in the LHIN to assess the range of services available to support the health and well-being of mom and babies.

Engaging Community Providers - Key Informant Interviews
Structured in-depth interviews were conducted with key HNHB LHIN providers involved in maternal and newborn services to explore the strengths, challenges and opportunities for local maternal and newborn health planning, partner and stakeholder contributions to health outcomes and priorities for clinical and health system improvements.
The key informant interviews were selected from among family physicians, midwives, obstetricians, public health staff and hospital administrators working within the HNHB LHIN boundary and within traditional clinical boundaries of the Central-West Region.

Other Jurisdictions
The literature review focused on reports that examined maternity services at the national level that had undertaken an extensive review on other jurisdictions as part of their research. As such, the committee limited its review to examination of Ontario LHINs IHSPs to identify whether maternity care was identified as a priority or emerging issues by other LHINs.

Expanding Engagement with LHIN Experts - Secondary Review
The Steering Committee's research, analysis and recommendations were documented in a final draft report. The final reports were sent to a secondary review panel comprised of clinicians and administrators, along the continuum of maternity care within the HNHB LHIN. The comments provided by these reviewers were incorporated into the Steering Committee's final report.

Appendix D

LITERATURE REVIEW

The purpose of the literature review was not to duplicate extensive reviews that had been conducted by other committees/panels but to review recent reports for their findings and recommended maternity care strategies for the purpose of informing the Committee's deliberations. Since 2004, a number of reports have been published on maternity care in Canada and Ontario.

Between 2004 and 2006, the Canadian Institute of Health Information (CIHI) published three reports under the generic title of *Giving Birth in Canada*. These reports provide an overview of maternity care in Canada. The first report[i] provided key insight into the changing role and scope of health professionals providing maternity care. Family physicians were found to be delivering fewer babies. Obstetricians were attending an increasing proportion of both vaginal and caesarean births and mostly practice in urban settings. While family physicians continued to be heavily involved in maternity care more were sharing care with other providers, transferring care to other family physicians (that provide birthing services), obstetricians or midwives at 32 weeks (referred to as shared care). New family doctors were reported to make decisions not to deliver babies during their residency. Factors suggested for this decision included; concerns about personal lives, confidence with obstetrical skills, fee structures and perceived threat of malpractice suits. CIHI identified this as a particular issue for rural areas where family physicians were reported to deliver more babies than those practicing in urban areas. CIHI reported that more Canadian provinces are regulating the practice of midwifery (Ontario legislated midwives in 1994). Midwives provide care to women in all stages of pregnancy. In 2001, there were over 370 midwives in Canada. Other professionals included in the care of women during pregnancy include (but not limited to) nurses, nurse practitioners, anesthetists and lactation consultants. CIHI reported on the average age of health professionals involved in maternal and new born care in Canada. In 2001; 46% of Canada's family physicians and 60% of Canada obstetricians were over 45 years old, 54% of Ontario's midwives were over the age of 40 years, most of Canada's nurses were between 30-59 years old and the average age of pediatricians was 48 years old with none under 30 years old. CIHI concluded that the changing practice along with the general trend towards early retirement have implications for decisions in health human resource management, including recruitment, retention, professional training and education.

CIHI's second report[ii] focused on the birthing process, selecting health care indicators for mothers and babies that included; the use of epidurals, assisted deliveries, caesarean sections and the proportion of newborns admitted to a neonatal intensive care unit. Data on these indicators was reported at the health region level, for Ontario the data was at the District Health Council (DHC) level, which allowed the LHIN to compare Hamilton and Niagara DHC regions against an Ontario average. CIHI reported that for each indicator there was substantial variation in practice across the country, which was likely due to a complex set of factors (demographics maternal and newborn health, clinical preferences and choice, availability of specialized resources) not all of which are understood.

CIHI's third report reported on the costs of providing maternity care in Canada[III]. The cost of providing maternal and newborn care varied greatly depending on the type of delivery. In 2002/03 hospitals spent 1 in 10 dollars on inpatient maternity and newborn care. Inpatient hospital cost for an uncomplicated vaginal delivery was $2,700 compared to $4,600 for a caesarean delivery. Due to the volume of uncomplicated vaginal deliveries, these services accounted for the largest proportion of hospital spending on obstetrical patients. Hospital costs for healthy newborn care ranged from $800 (vaginal delivery) to $1,400 (caesarean delivery). Hospitals reported the average cost to admit babies to a neonatal care unit was $9,700 (based on data from 27 hospitals). How maternity services are configured, technology and practice patterns will have financial impact.

In 2004, the National Aboriginal Health Association published a report *Midwifery and Aboriginal Midwifery in Canada*. The paper discussed gaps in maternity care policy and practice in Aboriginal communities as well as the critical need for maternity care services. The paper promoted emerging models of community-based care, based on Aboriginal midwifery, stating that the existing practice of evacuating women from remote or semi-isolated communities to secondary or tertiary centres at 36 weeks was not supported by evidence or meeting the needs of Aboriginal women and families. The report expanded on the recommendations of the Aboriginal Health Policy strategic directions regarding access to midwives who can encourage traditional Aboriginal teachings of wholistic health. As early as 1994, the policy recommended co-ordination between First Nations/Aboriginal and non-Aboriginal communities to facilitate access to, and work with traditional healers and midwives within the health care system as well as directed public health to make available culturally appropriate programs and services designed by or with the involvement of Aboriginal people.

The literature review incorporated three maternity care research projects that were approved for funding under either the Federal Government or Ontario Ministry of Health and Long Term Care's (MOHLTC) Primary Health Care Transition Funds Program.

- The Multidisciplinary Collaborative Primary Maternity Care Project (MCP2), funded by Health Canada released its final report; *Guidelines for Development of Multidisciplinary Collaborative Primary Maternity Care Model* in June 2006. The overarching goal of this project was to reduce key barriers and facilitate the implementation of national multidisciplinary collaborative primary maternity care strategies as a means of increasing the availability and quality of maternity services for all Canadian women[IV]. The main theme of MCP2's recommendations was the commitment by Governments and stakeholders to a coordinated, pan-Canadian approach to sustaining a multidisciplinary collaborative maternity care strategy that respects diversities and realities of each province and territory.

- Babies Can't Wait, was developed by the Ontario College of Family Physicians and its partners in response to the realization that family physicians, the backbone of maternity care across Canada were choosing not to be involved in delivering babies. The project team developed and tested models (using focus group and surveys) of care to assess their impact on the recruitment and retention of maternity care providers while meeting the needs of women and their family members. The final report completed in August 2006, confirmed that Ontario, especially given its heavy reliance on obstetricians, who are currently in the pre-retirement phase of their careers, is facing a maternity care crisis if actions are not taken to recruit and retain maternity care providers. The author's note that only 6% of Ontario's family doctors participate in intrapartum care compared to 75% in Nova Scotia. The project found that providers, learners and educators agree that no one model will fit all. Obstetricians and midwives endorsed a uni-professional model which they felt provided greater continuity of care. However, interest in multi-professional models was reported to be growing and supported by patients and their families.

- The Integrated Maternity Care for Rural and Remote Communities (IMCRRC) project was funded by the Ontario MOHLTC. The goal of the project was to help sustain maternity care in rural and remote Ontario communities by supporting hospitals; health care providers and communities find an interdisciplinary model of care that meets the needs of their community and providers. IMCRRC note that the closure of local maternity services in small hospitals is occurring with increasing frequency in Ontario and across Canada, causing many rural women to travel further for maternity care. The project identified that collaborative sustainable models of care need to be flexible, developed to meet community needs, women-centred, have clinical and administrative leadership and have mechanisms in place that support and facilitate collaboration.

In May 2007, an Expert Panel established by the Stevenson Memorial Hospital to examine the feasibility of re-establishing a sustainable, quality and safe level I maternity service in New Tecumseth submitted its final report. Declining birth rates and difficulty retaining and recruiting physicians had challenged the hospital to maintain its maternity service. The Panel recommended a regional collaborative model where the maternity service would be managed though a program management model led by a regional centre[v].

In June 2006, the Ontario Maternity Care Expert Panel (OMCEP) submitted it final report, *Maternity Care in Ontario 2006: Emerging Crisis, Emerging Solutions* to the Ontario Women's Health Council. In this report the authors provide an overview of maternity care in Ontario, describing it as a system under stress. The report outlines a vision and strategy for maternity care in Ontario where every woman would have access to high quality, family centred care as close to home as possible. The report makes recommendations within ten broad categories. An overarching recommendation is for the Ministry of Health and Long Term Care (MOHLTC) to establish provincial maternity care program and regional network that would be responsible for creating a sustainable and newborn care plan for Ontario with full financial responsibility and accountability. The provincial program would be managed through an *Office of Maternal Newborn Health* (Office) established within the MOHLTC. The Office would work directly with LHINs to help to shape and guide local and inter-LHIN maternity care plans. The report documents many models of care that are in use today.

The Panel notes that team-based models have emerged in response to access issues, provider workload and to achieve sustainability. Communities can explore these models when scarcity of human resources is threatening the sustainability of their maternity service. The panel makes no attempt to rank the models, rather advises that the right model is one that fits the community needs. The Panel did state that a model of care that consolidates services so that women with normal pregnancies are referred to larger units away from home has well documented disadvantages including increased maternal and newborn mortality. The panel does comment that there are many existing models that are working well and these should be preserved.

While the literature review was limited in its scope, reports from British Columbia and Nova Scotia were reviewed to determine their strategies to achieve a sustainable maternity care system. In 2004, British Columbia's Maternity Care Enhancement Project released a report entitled: *Supporting Local Collaborative Models for Sustainable Maternity Care in British Columbia*. The panel described their project as a start in developing a women centered approach to maternity care services, where mother and baby are placed in the centre of care and their requirements drive workforce requirements. The panel supported women centered, collaborative, team-based service models and suggested that sustainable maternity care models need to offer flexibility, create local solutions and respect local capacity and resources.

In 2005, a Nova Scotia Department of Health's, Primary Maternity Care Working Group submitted a final report supporting a collaborative team based approach for the delivery of primary maternity care that included family physicians and midwives. The working group recommended that models should have sufficient flexibility to respond to primary maternity care needs and capacity of the particular community. The working group also recommended that midwifes be a licensed regulated profession in Nova Scotia.

The literature review suggests that the sustainability of a quality women and family centred primary maternity care system will require the commitment of health care professionals from different sectors and funders to work collaboratively. To achieve this there will need to be a willingness to go beyond historical habits and approaches to maternity care.

A review of LHINs 2006 Integrated Health Service Plans revealed that while four LHINs referenced maternity services only two LHINs identified maternal and newborn services as a priority or emerging priority, Central West and HNHB LHINs. Concerns raised by these two LHINs focused on issues of access, outcomes and sustainability.

Appendix E

REVIEW OF THE CURRENT STATE

Identifying the current state of maternity care in the LHIN included the use of qualitative and quantitative data. This approach was used to gain a better understanding of existing maternity services, their organization and the potential of the system to meet the future maternity needs of HNHB LHIN women.

Limitations
The committee attempted to create an accurate picture of maternity care in the HNHB LHIN; however, it must be acknowledged that the information provided had the following limitations:

- Availability of data on prenatal and postpartum services, including utilization, practices and outcomes.
- Use of Community Health Survey Data represents self reported status of health and wellness and is not validated.
- Hospital human resource and capacity data was obtained through a hospital survey and represents resources at the time of the survey as provided by hospitals.
- Data from Provincial Health Planning Database was only available up to fiscal year 2005/06.
- LHIN boundaries do not align with Public Health Unit boundaries and data for Halton is aggregate data.
- The views of women and their families were not included.

WHO IS HAVING BABIES?

HNHB LHIN – Profile of Women Giving Birth
Knowing the health characteristics of women who are giving birth in the LHIN assists providers and funders to better plan services that meet the needs of women and their families.

For the purpose of this planning initiative, women of childbearing years were defined to be between the ages of 15 and 44 years. In 2006, the overall population of the LHIN was approximately 1.3 million; women of all ages numbered 698, 280 and women between the ages of 15 and 44 represented 40% of the total female population. The average age of women giving birth in HNHB LHIN remained constant between 1999 and 2005 (28 years) just slightly below the average age for Ontario mothers (29.2 to 29.8 years).

A woman's experience of health and wellness during pregnancy is influenced by health determinants that include; social, economic, personal health characteristics, coping skills and access to health services[vi]. The 2005 Community Health Survey (CHS) identified that in HNHB LHIN:

- 20.5% of women are smokers and have a higher exposure rate to second hand smoke (8.1%) than the Ontario average;

- 43.9% of all women are more likely to be overweight, live a sedentary lifestyle and consume an unhealthy diet;
- 18.5% of the women report high blood pressure and 25.1% report high life stress, contributing to poor health status; and
- 5% of HNHB LHIN women report having Diabetes.

To obtain a more precise understanding of the health indicators as they related to the health status of women who are of childbearing age within the LHIN, data from the CHS was reviewed for women age 12 to 44 years. The data revealed (refer to Table 1) that women of child bearing age living in HNHB LHIN reported rates higher than the Ontario average for asthma, hypertension, diabetes, daily smoking, exposure to second hand smoke, binge drinking and obesity and lower rates of poor diet, physical activity and life stress.

Table 1: Health Profile of Women Giving Birth

Characteristics	Percentage of HNHB LHIN Women Age 12-44 Years	Percentage of Ontario Women Age 12-44 Years
Asthma	13.0	9.9
Hypertension	3.9	3.1
Diabetes	1.6	1.1
Poor Diet	48.5	49.9
Physical Inactivity	41.2	45.4
Daily Smoking	16.5	14.2
Exposure to 2nd Hand Smoke	27.8	24.4
Binge Drinking	18.5	17.4
Obesity (age 18+)	12.6	10.9
Life Stress	23.7	24.0

Source: Community Health Survey 2005

While these differences may have little or no statistical significance they do indicate that a number women of childbearing age within the LHIN report health indicators that could impact their health and the health of their newborns if they become pregnant.

Other factors influence the health status of women and were factors considered in this planning initiative[vii]:

- **Linguistic barriers:** The percentage of HNHB population with no knowledge of French or English is highest in Hamilton (1.8%); but is lower than the provincial average (2.1%);
- **Lone parent families:** 20% of the families within the LHIN are headed by a lone female parent. Higher rates of female lone-parenthood are evident in Welland, Niagara Falls and Fort Erie, where close to one quarter of all families are headed by a lone female parent;

- **Family income:** 16.1% of families live below the poverty line, associated with low-skilled jobs, high unemployment, unfavourable lifestyle and living conditions. An average of 25% of all households spend more than 30% of their income on housing with higher percentages in urban areas (Hamilton 26.8%, St. Catharine's, 26.1%, Niagara Falls 25.7% Brantford 25.5%). Households spending over 30% on housing may have inadequate funds for other necessities such as food, clothing, transportation and health care and are vulnerable to eviction.

Teenage Pregnancy in HNHB LHIN

Since 1996 the number of teenage pregnancies has marginally decreased in HNHB LHIN. In 2005/06 the proportion of births to mothers under the age of 20 years was 5% (620), 1% higher than the Ontario average (4%), but 1 % lower than the rate reported for HNHB LHIN in 1996.

While the rate of teenage pregnancy has declined in the LHIN, providers reported that it remains a concern for some communities. The most recent available local Public Health data (2003/04) reported that Niagara was the only HNHB LHIN region reporting an increase in teen pregnancies. Teen pregnancy may be associated with psychosocial outcomes that include school interruptions, limited work and paternal separation (or absence)[viii]. Adolescent pregnancies almost certainly lead to child poverty as well as concurrent youth poverty for the adolescent parent.[ix]

First Nations/Aboriginal Communities

The HNHB LHIN boundaries include two First Nations reserves and several dynamic urban Aboriginal communities. Each community, whether on or off reserve has a unique relationship with the government, either provincial or federal (sometimes both) and requires Aboriginal planning approaches that meet the needs of a distinct populations. With respect to population health data, profiles of First Nations communities are generally available at a national level; there is little comparable data at the local level for First Nations and urban Aboriginal communities.

The HNHB LHIN does not have direct responsibility for planning and funding Aboriginal specific health services. However, regardless of residency, Aboriginal women will access maternity care through a family physician, obstetrician or midwife and will deliver at home, in hospital or at the birthing centre on Six Nations Territory. It is the LHINs responsibility to plan with all stakeholders, including First Nations and Aboriginal communities to ensure programs and services remain accessible and relevant to the population.

Teen Pregnancy and Aboriginal Youth

There are no statistics for Aboriginal youth living on or off reserve in Ontario, however, it is widely held that Aboriginal youth are more likely to become pregnant than non-Aboriginal youth. Health Canada data demonstrates that pregnancy rates among Aboriginal youth on reserve in British Columbia, the Prairies and the Atlantic region are up to four times higher than rates among the general population. For girls under 15 years of age, the rates are estimated to be as much as 18 times as high as that of the general teen population in Canada.[x] Sexual behaviour and teen pregnancy are being addressed locally through Aboriginal specific programs as part of a longer-term health strategy for Aboriginal children, youth and families.

Characteristics of Aboriginal Families:

- **Younger Parents:** 12% of Aboriginal families are headed by a parent under 25 compared to 3% in the general population;
- **More Single Parents:** 27% of Aboriginal families are headed by single parents compared to 12% in the general population;
- **Lower Income:** 39% of Aboriginal single mothers earn less than $12,000 a year compared to 22% of single mothers in the general population;

Migration to small towns and city centres has challenged governments (both Aboriginal and non Aboriginal) to find responses to urban Aboriginal health needs.[xi] In 2001, Ontario had the largest Aboriginal population of all the provinces, the majority (78%) living off-reserve[xii].

In the HNHB LHIN, the Aboriginal People's Survey (2001) demonstrated the youthfulness of the female population. On average, in select communities across the HNHB LHIN, 51% of the total urban Aboriginal female population was between the ages of 15 and 44 years (Refer to table 2).

Table 2: Urban Aboriginal Female Population in Selected LHIN Municipalities

Urban Aboriginal Female Population in Selected LHIN Municipalities			
	Number of Aboriginal Women	**Percentage of Total Aboriginal Population**	**Number (Percent) of Aboriginal Women between ages 15-44 years**
Brantford	1,335	53%	675 (50%)
Hamilton	3,250	51%	1650 (50%)
St. Catharines	780	52%	425 (54%)
Fort Erie	475	53%	240 (50%)
Niagara Falls	465	53%	250 (53%)

Source: 2001 Aboriginal People's Survey, Community Profiles.

Francophone Population

Almost one in five Francophone families in Ontario is a single parent family (18.2%), most often headed by a woman (81.4% of single parent families). The availability of French language maternal services is not consistent across the HNHB LHIN. The Centre de Sante Communautaire Francophone Community Health Centre Hamilton/Niagara, delivers a pre and postnatal program, pre/postnatal courses, childbirth and breastfeeding support, and nutritional support. The centre provides services from both its Hamilton and Welland locations and targets the Francophone immigrant population that is most significant around Welland. The unique and specific ethnocultural needs of immigrant Francophone women are an additional challenge for Centre de Sante in striving to provide appropriate care to women.

Vulnerable Populations:
Gender based vulnerabilities are further compounded for pregnant women of colour, women with a disability, lesbian women and women living in poverty. Common barriers to accessing health care cited in the literature are those of a financial, cultural, linguistic, or geographic nature as well as attitudes that discriminate against these vulnerable groups.

Racialized groups may have difficulty accessing health care for reasons such as lack of health professionals with experience in working in diverse communities. Linguistic barriers frequently hinder patient choice, informed consent and access to equitable health care. Access to health services from initial consultations to emergency care is quite different among populations with no knowledge of French or English. Interpretation and translation services are costly and the demand for these services exceeds the supply, resulting in higher overall costs to the health system.[xiii]

While not specific to women with the HNHB LHIN, the highest percentage of visible minorities is found in Hamilton (10.9%) and Burlington (7.5%). Within Hamilton over one third of the census tracts have a percentage of visible minorities greater than 10%[xiv]. On average, 30% of HNHB residents have lower education levels, which can be associated with low-skilled jobs, unfavorable health behaviors, unsatisfactory living conditions and a greater prevalence of disability and health problems. The average percent of income derived from government transfer payments (i.e. Ontario Works) across the HNHB LHIN is 11.7%. This is higher than the Ontario average (9.8%). Income is a determinant of health and low income can restrict access to basic needs and can limit one's ability to participate fully in community life, causing stress and restricting choices. The link between poverty and poor mental health status is well documented and manifests in symptoms such as depression and anxiety, which can profoundly affect pregnancy, parenting and the health of children. [xiii]

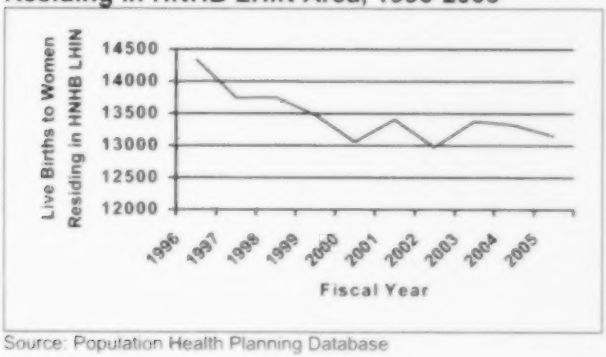
Estimating the Future Demand for Maternity Services

The number of births in HNHB LHIN declined after 1996 and has varied from 13,000 to 13,500 births annually since 1999. According to Ministry of Finance population projections the number of females aged 15-44 years living in HNHB LHIN is expected to increase by 6,800 between 2006 and 2016.

To determine whether the population growth projected in the childbearing age group (15 to 44 years) would occur in the age ranges that report higher births per population, data on birth per population was compared to population projections by 5-year age groups. The data revealed that population growth is expected in the 25 to 35 year age groups, the two groups that report the highest rate of live births (95-100 per 1000 females).

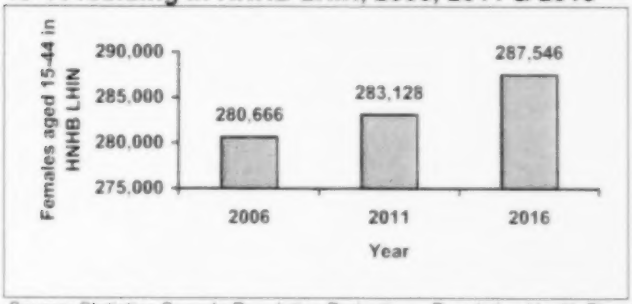
A further review of these groups revealed that by 2016, 41% will reside in Hamilton, 28% in Niagara, 15% in Burlington, 10% in Brant and 7% Haldimand and Norfolk. (Projections for Burlington have been derived from Burlington female population aged 25-34 years as a proportion of Halton female population in 2005).

Chart 1: Number of Live Births to Women Residing in HNHB LHIN Area, 1996-2005



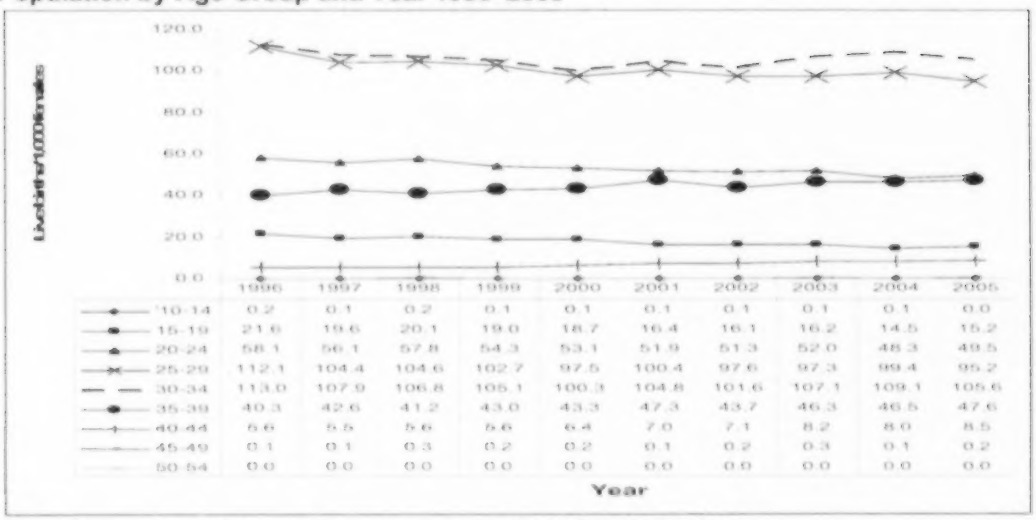
Source: Population Health Planning Database

Chart 2: Projected Population of Females aged 15-44 residing in HNHB LHIN, 2006, 2011 & 2016



Source: Statistics Canada Population Projections, Population Health Planning Database

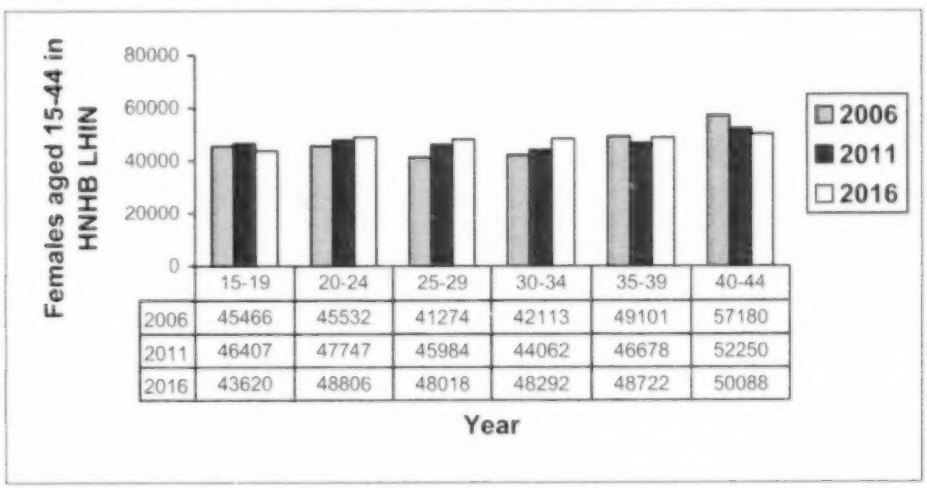
Chart 3: Number of In Hospital Live Births per 1000 Population by Age Group and Year 1996–2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
10-14	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0
15-19	21.6	19.6	20.1	19.0	18.7	16.4	16.1	16.2	14.5	15.2
20-24	58.1	56.1	57.8	54.3	53.1	51.9	51.3	52.0	48.3	49.5
25-29	112.1	104.4	104.6	102.7	97.5	100.4	97.6	97.3	99.4	95.2
30-34	113.0	107.9	106.8	105.1	100.3	104.8	101.6	107.1	109.1	105.6
35-39	40.3	42.6	41.2	43.0	43.3	47.3	43.7	46.3	46.5	47.6
40-44	5.6	5.5	5.6	5.6	6.4	7.0	7.1	8.2	8.0	8.5
45-49	0.1	0.1	0.3	0.2	0.2	0.1	0.2	0.3	0.1	0.2
50-54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source Statistics Canada Population Projections, Population Health Planning Database

Chart 4: Projected Population of Females aged 15-44 residing in HNHB LHIN, 2006, 2011 & 2016, by Age Group



	15-19	20-24	25-29	30-34	35-39	40-44
2006	45466	45532	41274	42113	49101	57180
2011	46407	47747	45984	44062	46678	52250
2016	43620	48806	48018	48292	48722	50088

Source: Statistics Canada

Population Projections, Population Health Planning Database

WHO IS PROVIDING BIRTHING SERVICES?

Prenatal Care

The purpose of providing prenatal services is to improve and maintain the health and well-being of mothers, babies and families. Prenatal care involves ongoing assessment and monitoring of the health status of the mother and the unborn child. Health Canada Guidelines (2000) recommended that prenatal care be provided in an environment where[xv]:

- pregnancy is a state of health;
- women and families are valued and respected;
- the relationship between women and health care providers is mutually consultative and interactive'
- the diversity of women's needs is recognized, as well as the variety of personal and cultural meanings that women and families bring to pregnancy; and
- care providers facilitate the process of informed decision making

Women in the HNHB LHIN receive prenatal care from a core group of health professionals: family physicians, midwives, obstetricians, nurse practitioners, and other physician specialists as required.

A family physician, midwife or nurse practitioner can confirm pregnancy. (This may occur in a private practice, walk-in clinic, family health team (FHT), community health centre (CHC) or at an Aboriginal Health Centre (AHC). The professional lead for prenatal care is largely influenced by where a woman accesses primary care, the perceived risk assigned to the pregnancy and by traditional patterns of collaboration.

Family physicians may provide prenatal and intrapartum services but generally refer patients to obstetricians or midwives. Nurse practitioners working in Community Health Centres and Aboriginal Health Centres will refer patients to, consult with and transfer care to family physicians and obstetricians. Women may self-refer to a midwifery practice or be referred by their primary health care provider. The extent to which women have information available to them about options for care and exercise a choice is unknown. Access to community programs during the prenatal and post-partum period is facilitated by public heath nurses or through self-referral.

Access to Prenatal Care

In 2006, Babies Can't Wait [xvi] reported that the number of family physicians providing the full continuum of obstetrical care has decreased over the last two decades. This changing trend has increased the perinatal workload of obstetricians, decreasing their availability to consult on high-risk patients and provide specialized care. With regard to midwifery, many women are on waiting lists to access care through a midwifery practice, as the demand for midwives is exceeding the supply (Association of Ontario Midwives). While more midwives are being trained, their scope of practice varies across the HNHB LHIN, limiting their contributions to care in some areas dependent on their professional relationship with their hospital host.

In 2003/04, data showed that the majority (greater than 75%) of prenatal visits in the HNHB LHIN were completed by family physicians (16%), obstetricians (38%) and through shared care utilizing both obstetricians and family physicians (33%)[xvii].

Variation in accessing a family doctor, across the HNHB LHIN, impacts on the uptake of prenatal services for women. According to the 2005 Canadian Community Health Survey, 93.5% of Hamilton Niagara Haldimand Brant LHIN residents reported that they had a regular medical doctor, above the Ontario average of 91% and the highest amongst the 14 LHINs. Similarly, 81.5% of LHIN residents reported that they had contact with a medical doctor in the last year. Despite these rates, across the LHIN there are sixteen communities currently under MOHLTC designation as underserviced list of areas designated as under-serviced (LADAU) by family physicians. Overall in these communities there are 135 vacancies across the HNHB LHIN for family physicians. The report for the Under-serviced Area Program states that a full complement of family physicians for the HNHB LHIN would be 554. [xviii]

Access to Public Health Prenatal Programs

Across LHIN municipalities, a variety of prenatal classes is available to women. Larger municipalities are able to tailor classes to youth, single parents and couples (Burlington, Hamilton and Brantford.); however they may not offer classes for marginalized populations such as same sex partners. An inventory of prenatal services offered by public health was attempted through internet research. Program descriptions were available; however, the frequency, attendance level and outcomes would require a detailed analysis which could not be accommodated in this study.

Giving Birth – Referred to as Intrapartum Care

How Hospital's are classified for Maternity Services

Hospitals that provide maternity services are referred to as primary, secondary or tertiary or level I, II, and III hospitals. This designation refers to the maternal and newborn services that the hospitals provide. Health Canada publishes national guidelines[xv] that document the services and processes hospitals should have in place for each level. Primary or level I hospitals, provide care to women that are expected to have a normal healthy birth of a full term baby. These hospitals may be in smaller rural communities. Level II hospitals in addition to providing level I care are expected to have the resources to care for women with selected health conditions and babes born prematurely at greater than or equal to 32 weeks. Level III or tertiary level hospitals provide level I and II care and care for women whose pregnancies are at risk (less than 32 weeks), or have severe medical conditions.

HNHB LHIN has all three levels of care. The Level III facility plays an important role in the provision of tertiary level maternity care for neighbouring LHINs. Designation of the service level are not formally made by the Ministry and this creates its own set of maternity care challenges as health service providers self-determine the level of care they provide. Ten hospitals across the LHIN provide maternal and new born care. Of these, five hospitals provide level I, four provide level II and one provides level III maternity care Brantford General and Joseph Brant Memorial self-identify as level II maternal and newborn care providers; however, the designation is variable and dependent on the availability of specialists.

Table 3: Hospital Services by Level of Care

Level I	Level II	Level III
Provide care for healthy mothers and babies **or** those with few immediate complications Provide emergency care for the mother and baby Provide safe and effective transfers when required Staff, resources and processes as itemized by Health Canada Guidelines (2000)	In addition to Level I capabilities: Provide care for • pregnant women at ≥ 32 weeks's gestation who may experience certain complications and/or health problems • babies with mild to moderate selected conditions • newborns with birth weights of 1500 g or greater and stable low birth weight babies • newborns transferred back from Level III centres Provide induction and augmentation of labour Establish procedures and protocols for emergency responses including caesarean birth, so that physicians respond within 15 minutes and in hospital within 30 minutes thereafter. Staff, resources and processes as itemized by Health Canada Guidelines (2000)	In addition to Level I and II capabilities: Provide care for: • pregnant women whose pregnancies are at risk • babies with severe health conditions Have in place: • a system for receiving referrals for women whose pregnancies are considered to be high risk • a neonatal transport program Staff, resources and processes as itemized by Health Canada Guidelines (2000)

Source: Family-Centred Maternity and Newborn Care: National Guidelines 2000

Where Women Give Birth

Women in the HNHB LHIN choose to give birth in hospitals, at a birthing unit (one) or at home:

Hospitals
In 2005/06, 98% of all LHIN births occurred in hospital. Of those 29% occurred at level I hospitals, 50% at level II and 21% at level III Refer to Table 4. In 2005/06, obstetrical care was the leading cause of hospital admissions in the LHIN representing 12% of all hospital discharges. Of these 94% were LHIN residents.

Table 4: HNHB LHIN Hospitals that provide intrapartum care, by designated level of care, midwife affiliation and volume of births reported in 2005/06 and percent of births by county of mother's residence

Hospital	Midwife Practices Affiliated with Hospitals	# Births 2005/06	Percent of Births by County of Patient/Mothers Residence
Level I			
The Brantford General Hospital, Brant	• Community Midwives of Brantford	1205	• 85% Brant • 10% Haldimand & Norfolk
Norfolk General Hospital, Norfolk	• Midwives of East Erie	397	• 89% Haldimand & Norfolk
West Lincoln Memorial Hospital, Grimsby	• Niagara Midwifery Practice • Sages Femmes Renaissance Midwifery	529	• 88% Niagara Reg. Mun.
Joseph Brant Memorial Hospital, Burlington	• Burlington and Area Midwives	1639	• 71% Halton Reg.Mun. • 23% Hamilton
Haldimand War Memorial Hospital, Dunnville	• No midwives affiliated	72	• 92% Haldimand & Norfolk
Total # Births at Level I Centres		*3,842*	
Level II			
Niagara Health System - St. Catharines Site	• Niagara Midwifery Practice • Sages Femmes	1410	• 69% St. Catharines • 8% Thorold
Niagara Health System - Welland Site	• Sages Femmes • Midwives of East Erie	725	• 50% Welland • 16% Port Colborne • 10% Fort Erie
Niagara Health System – Niagara General Site	• Sages Femmes	1014	• 62% Niagara Falls • 14% Fort Erie
St. Joseph's Healthcare, Hamilton	• Community Midwives of Hamilton • Midwives of Stoney Creek	3482	• 85% Hamilton • 5% Haldimand & Norfolk • 4% Niagara Reg. Mun.
Total # Births at Level II Centres		*6,631*	
Level III			
Hamilton Health Sciences - McMaster Site	• The Hamilton Midwives • Community Midwives of Hamilton • Midwives of Stoney Creek	2873	• 65% Hamilton • 9% outside HNHB LHIN • 7% Haldimand & Norfolk • 7% Niagara Reg. Mun. • 6% Brant • 6% Halton Reg. Mun.
Total # Births at Level III Centres		*2,873*	
Total # Births 2005/06		***13,346***	

Source: Population Health Planning Database 2005/06, CMG 611

Note:

1. Joseph Brant in Burlington and Brantford General Hospital function as Level 2 with the exception of total parenteral nutrition and long term ventilation services.
2. Hospital designation based on LHIN June 2007 survey
3. Midwife affiliation as reported in LHIN June 2007 survey
4. Niagara Health System is unique because it has multiple sites; data are shown by municipality.

In 2005 Canadian Health Association reported that almost two-thirds of Canadian hospitals have fewer than 500 births per year and nearly one third have fewer than 100 births per year[xix]. In the HNHB LHIN there are two hospitals that reported less than 500 births and one that reported less than 100 births annually in 2005/06.

Birthing Centre

Tsi Non:we Ionnakeratstha Ona:grahsta' is a maternal and Child Centre located on the Six Nations of the Grand River Territory with full time Aboriginal Midwives providing a balance of traditional and contemporary midwifery services and programs. The Aboriginal community, family and expectant mothers are offered a choice of services and programs that will complement and support personal beliefs, preferences and customs. Midwives offer clinic days and travel off-reserve to Fort Erie, St.Catharines, Hamilton and London to provide prenatal, intrapartum and postpartum follow-up to urban Aboriginal women living in city centres.

Home Births

In 2005/06, 227 (86%) of 265 HNHB LHIN women who planned to have their babies at home did so attended by midwives. Homebirths accounted for 2% of total HNHB LHIN births in 2005/06. There are nine midwifery practices in the LHIN (including one on the Six Nations Reserve). Midwife practices and their affiliation with hospitals are noted in Table 4.

WHO IS DELIVERING BABIES

Based on the Population Health Planning Database (PHPDB) data of the 13,346 births that took place in HNHB LHIN hospitals in 2005/06, 82% were attended by obstetricians (including 75% of all vaginal deliveries) 12% by family physicians, 4.8% by midwives, and 0.007% by general surgeons (refer to Table 5). The LHIN wide reliance on obstetricians as the primary provider varies across LHIN hospitals. Two LHIN hospitals Norfolk General Hospital and Haldimand War Memorial Hospital report no obstetricians attending births, relying solely on family physicians and general surgeons (Norfolk General Hospital). A decline in deliveries by family physicians would impact the sustainability of these services. Three LHIN hospitals (West Lincoln Memorial Hospital, Joseph Brant Memorial Hospital and St. Joseph's Healthcare, Hamilton) that have obstetricians and family physicians attending births report a higher percentage of births attended by family physicians than the other HNHB LHIN hospitals with the same staff mix. The remaining five LHIN hospitals report obstetricians attending 91-96% of all births.

The use of obstetricians as the primary provider during birth was consistent with the practice across Ontario, in 2006; the Institute for Clinical Evaluative Sciences[xx], the Provincial Perinatal Report[xxi] and OMCEP[xxii]reported obstetricians delivered 75%–80% of Ontario babies.

Table 5: Most Responsible Provider and HNHB LHIN Hospital 2005/06

Hospital	# Women Delivering Babies 2005/06	Most Responsible Provider and Percent of ALL Births
The Brantford General Hospital, Brant	1195	• 91% Obstetrician (1095) • 7% Family Physician (82) • 2% Midwife (18)
Norfolk General Hospital, Norfolk	363	• 23% General Surgeon (91) • 77% Family Physician (302)
West Lincoln Memorial Hospital, Grimsby	526	• 50% Obstetrician (264) • 33% Family Physician (174) • 17% Midwife (88)
Joseph Brant Memorial Hospital, Burlington	1610	• 80% Obstetrician (1291) • 20% Family Physician (258) • 4% Midwife (61)
Haldimand War Memorial Hospital, Dunnville	71	• 100% Family Physician
Niagara Health System - St. Catharines Site	1385	• 96% Obstetrician (1334) • 1% Family Physician (31) • 2% Midwife (20)
Niagara Health System - Welland Site	720	• 92% Obstetrician (662) • 3% Family Physician (24) • 5% Midwife (34)
Niagara Health System – Niagara General Site	994	• 91% Obstetrician (896) • 3% Family Physician (32) • 7% Midwife (66)
St. Joseph's Healthcare, Hamilton	3440	• 81% Obstetrician (1112) • 17% Family Physician (575) • 4% Midwife (121)
Hamilton Health Sciences - McMaster Site	2727	• 91% Obstetrician (2476) • 1% Family Physician (33) • 8% Midwife (218)
Total # Women Giving Birth and Most Responsible Provider 2005/06	*13, 031*	• 82% Obstetrician (10,762) • 12% Family Physician (1582) • 4.8% Midwife (626) • 0.007% General Surgeons (91)

Source: Population Health Planning Database 2005/06

The use of midwives in the HNHB LHIN slightly increased over time and their attendance increased 12% from 2003/04 to 2004/05, remaining relatively constant in 2005/06. In 2005/06, HNHB LHIN hospitals reported that 4.8% of all hospitals births were attended by midwives. This uptake varied across hospitals, West Lincoln Memorial Hospital and Hamilton Health Sciences (17% & 8% respectively) reported a higher percent of births attended by midwives while Niagara Health system and Brantford General Hospital reported the lowest use at 2%. One hospital reported that no midwives had admitting privileges.

Hospital-based maternity nurses have a smaller role in prenatal care since most services are provided in community settings. However, they are central to labour and delivery and post partum care. Their expertise is vital in Level I, II, and III hospitals since they have the continuing contact with mothers and babies, must detect problems when they occur and provide anticipatory teaching to assist new families. Nurse practitioners provide prenatal care to women through out pregnancy at community health centres and transfer care to a family physician or midwife.

HNHB LHIN's Availability of Health Human Resources for Intrapartum Care

There is considerable concern over the potential shortages of maternity and newborn health care providers, and the challenges such shortages present to maintaining access to maternity care.

The survey completed by the LHIN (refer to Table 6) provided a profile of the LHINs maternity care providers. As of July 2007, LHIN hospitals reported the following health human resources providing intrapartum care. Since physicians and midwives can have admitting privileges in more than one hospital, care was taken to prevent counting persons twice when obtaining information from hospitals.

- 52 obstetricians
- 56 family physicians
- 50 midwives
- 308 FTE nurses (RN and RPN)
- 19.5 lactation consultants

The average age reported for the providers identified in the survey was; 49.4 years for obstetricians (female 45.6 years, males 53.3 years) and 47.4 years for family physicians (female 45.7 years, males 51.5 years). Female physicians tended to be younger than their male counterparts by 8 – 6 years respectively. An average age was not identified for midwives or nurses; however CIHI identified that in 2001, 54% of Ontario midwives were over the age of 40 years. In 2006, the Registered Nurses Association of Ontario (RNAO) reported that the average age of Ontario nurses was 45.6 years. Of 90,291 working registered nurses, 11.6% were working in the HNHB LHIN.[xxiii]

Table 6: Number of hospital maternity care health care professionals reported by type and site July 2007

Hospital	# OB/GYN	# Family Physicians	# Midwives that Hospitals report Privileges	Anaesthetist availability	Maternity Nurses by FTE	Lactation Consultants By FTE
The Brantford General Hospital, Brant	6 (4 Affiliate)	3 (1 Affiliate)	6	24 hours per day 7 days week (no second call)	34.5 RNs 2.37 RPNs	0
Norfolk General Hospital, Norfolk	0	8	2	On call	19	0
West Lincoln Memorial Hospital, Grimsby	2 (6 Affiliate)	7	6	24 hours per day 7 days week	11	0
Joseph Brant Memorial Hospital, Burlington	6 (5 Affiliate)	15	11	24 hours per day 7 days week (on call)	42	6
Haldimand War Memorial Hospital, Dunnville	0	1	0	On call	3	0
Niagara Health System - St. Catharines Site	6	4	6	24 hours per day 7 days week (on call)	26.97	2
Niagara Health System - Welland Site	3	1	8	24 hours per day 7 days week	14.9	0.5
Niagara Health System – Niagara General Site	3	2	7	24 hours per day 7 days week	14.9	1
St. Joseph's Healthcare, Hamilton	12 (6 Affiliate)	10 (7 Affiliate)	28	24 hours per day 7 days week	58	6
Hamilton Health Sciences - McMaster Site	14 (13 Affiliate)	9 (3 Affiliate)	20	24 hours per day 7 days week	81.5	1

Source: LHIN Hospital Survey July 2007

Organization and Capacity of Intrapartum Maternity Services

As noted previously, maternal and new born services are provided at ten hospitals (eight hospital corporations) across the LHIN and at the Tsi Non:we Ionnakeratstha Ona:grahsta, Six Nations reserve. There is no formal agreement between centres for coordinating maternal newborn services. Hamilton Health Sciences Corporation is the sole tertiary centre within the LHIN supporting level 3 maternal and newborn services for residents of HNHB and as well as neighbouring LHINs. Table 7 outlines LHIN maternal newborn capacity as identified by hospitals in July 2007 survey.

In order to acquire a more in-depth understanding of how the current maternal and newborn health system functions and whether it is perceived as meeting the needs of residents and providers the Committee reviewed the information obtained from the interviews with LHIN maternity experts.

Table 7: HNHB LHIN hospitals physical capacity for maternal newborn services including number of labour, birthing, operating rooms, number of post partum, nursery and nursery beds and nursery designation

Hospital	Labour Rooms	Birthing Rooms	Operating Suites	Post Partum Beds	Nursery Beds	Nursery Level	Additional Information
The Brantford General Hospital, Brant	0	5	1	17	8	Not designated	Functions as level 1 without TPN and long term ventilation
Norfolk General Hospital, Norfolk	2	2	1	5	5	1	Rooming in encourage
West Lincoln Memorial Hospital, Grimsby	2	2	0	11		Transition nursery	11 bassinettes
Joseph Brant Hospital, Burlington	0	6	1	20	1	1	Functions as level 1 without TPN
Haldimand War Memorial Hospital, Dunnville	0	2	0	0	2	1	
Niagara Health System - St. Catharines Site	0	8	2	16	11 (8 in operation)	2	C-Sections performed in Maternal Child Unit
Niagara Health System - Welland Site	5	2	0	14	6 (4 in operation)	2	C-Sections performed in main OR
Niagara Health System – Niagara General Site	0	5	0	14	6 (4 in operation)	2	C-Sections performed in main OR
St. Joseph's Healthcare, Hamilton	0	11	2	28 (Flex to 34)	15 (Flex to 20)	2	
Hamilton Health Sciences - McMaster Site	0	9	2	41	14	Well Baby	
					10	Level 2	
					41	Tertiary Level 3 NICU	

Source: LHIN survey July 2007

Inflow, Outflow and Transfer:
Inflow describes the movement of patients that live outside the HNHB LHIN but access health services that are situated within the HNHB LHIN boundaries. Outflow is the reverse, where residents of HNHB LHIN leave the LHIN to receive health services outside of the LHIN boundaries. Overall, these groups represent a small percentage of obstetrical separations. The most frequent reason non-HNHB residents' access maternity services within HNHB LHIN is for complications of pregnancy that require highly specialized attention.

Inflow
In 2005/06 there were 897 (0.05%) acute obstetrical in-patient separations at HNHB hospitals by patients residing outside of the LHIN. Women residing in neighbouring LHINs represented the majority of the inflow obstetrical cases seen in the HNHB LHIN.
In 2005/06, 20% of inflow related to acute inpatient transfers from other institutions.

Table 8: Inflow to HNHB LHIN

Inflow to HNHB LHIN	Cases	Percentage of Total Inflow
Waterloo Wellington LHIN	332	37%
Mississauga Halton LHIN	226	25%
Southwest LHIN	155	17%
SubTotal	***713***	***79%***
Total Inflow	897	100%
Inflow to Hamilton Health Sciences	473	53%

Source: Population Health Planning Database, 2005/06

The majority of inflow to HNHB LHIN hospitals went to hospitals in Hamilton (61%), followed by Burlington (17%) and Norfolk (12%).

Outflow
Women may leave the HNHB LHIN for maternity care for a variety of reasons. They may receive maternity care in the city of their employment, have a relationship with a physician in a former community or have additional family supports in that region. In 2005/06, 900 (5%) obstetrical cases went to non-HNHB hospitals. The majority were Burlington residents (61%) accessing care in Oakville.

Table 9: Outflow by HNHB Patient Residence

HNHB Patient Residence	Number of non- HNHB Hospital Separations	Percentage of the Outflow
Burlington	549	61%
Hamilton	153	17%
Brant	81	9%
Niagara	72	8%
Norfolk	36	4%
Haldimand	9	1%
Total	900	100%

Source: Population Health Planning Database, 2005/06

Transfers and Repatriation

Transfers refer to the movement of women and or their babies from one hospital to another in order to provide the appropriate level of maternal and newborn care. Repatriation is the transfer of women and or newborns from higher level maternity care hospitals to a community hospital with the services appropriate for their less complex needs.

The number of transfers or requests for repatriation are not readily available as hospitals may have used municipal or private ambulance services. However, data were available on formal transfer requests that use Ontario's CritiCall Program.

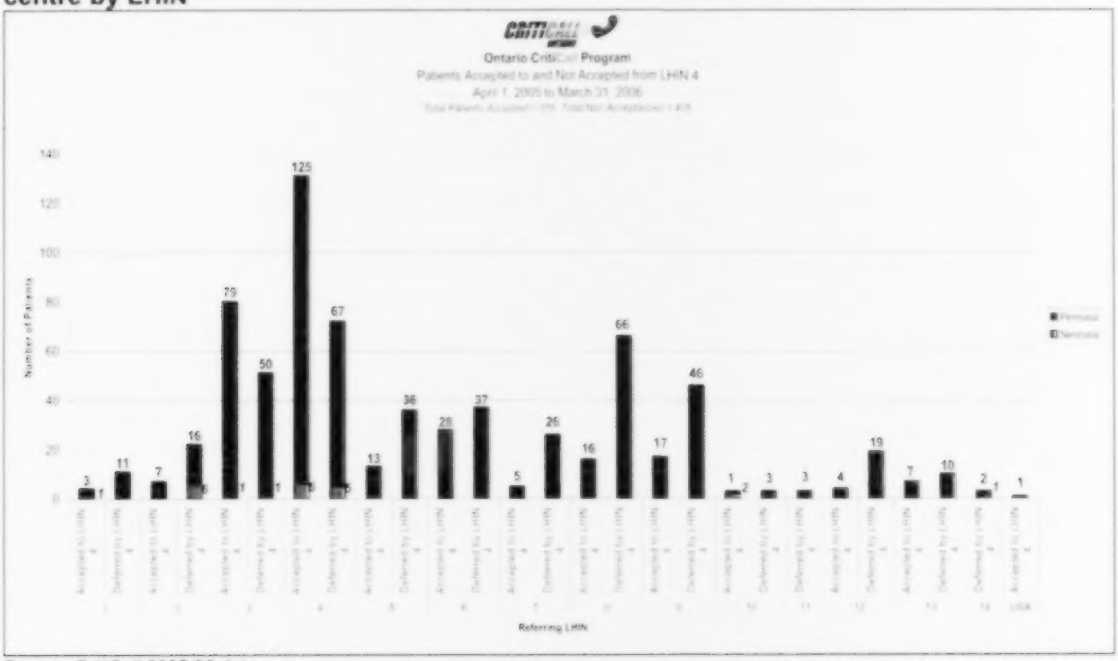
CritiCall Transfers

CritiCall is a 24-hour-a-day emergency referral service for physicians across the province of Ontario. It links hospitals and medical resources throughout Ontario, to provide strategic healthcare communications solutions when they are needed.

Unforeseen complications can arise during pregnancy, labour and birth that can result in an acute transfer of a woman and/or her newborn to a facility that can best provide the needed level of care. The HNHB LHIN has one level 3 tertiary care centre (HHS) for maternity care. In 2005/06, Criticall data reports that HHSC has the highest accepting and deferral rate of all the LHINs in Ontario.

This chart demonstrates the number of requests made by each LHIN through CritiCall that were accepted and deferred by the regional tertiary centre.

Chart 5: Total Accepted and Deferred CritiCall Requests for Transfer to the tertiary centre by LHIN



Source: CritiCall 2005/06 data.

Between April 1, 2005 and March 31 2006, CritiCall brokered 203 requests for perinatal and neonatal transfer within the HNHB LHIN. HNHB hospitals made 131 requests for transfer (125 perinatal and 6 neonatal) which were accepted to the tertiary centre. Conversely, 71 requests for transfers were not accepted resulting in women and/or newborns traveling further to access the right maternity care at the right time, most often to Erie St.Clair, South-West, Toronto Central and the USA.

Table 10: HNHB Hospital Requests for Transfer which were not accepted by the tertiary centre and the final destination of the patient

	Specialty	Reason for Not Accepting				
Referring Hospital		**Declined**	**No Beds**	**Physician Operating and Unavailable**	**Grand Total**	**Final LHIN & Hospital Destination**
Brantford General Hospital	1 neonatal 16 perinatal	-	16	1	**17**	1&7 • St. Joseph's Health care, London ON • Sunnybrook, Women's College Site
Joseph Brant Memorial Hospital	9 perinatal	-	8	1	**9**	1, 7 & USA • Sunnybrook, Women's College Site • Windsor Regional Hospital • Buffalo Children's Hospital
Henderson General Hospital	1 perinatal	-	1	-	**1**	No data
Greater Niagara General Hospital	1 neonatal 1 perinatal	-	2	-	**2**	2 &4 • Children's Hospital of Western Ontario • HHSC
St. Catharines General Hospital	2 neonatal 15 perinatal	-	14	3	**17**	1, 4, 7 & USA • Windsor Regional • Sunnybrook, Women's College Site • Buffalo Children's Hospital • St. Joseph's Healthcare • HHSC

	Specialty	Reason for Not Accepting				
Referring Hospital		**Declined**	**No Beds**	**Physician Operating and Unavailable**	**Grand Total**	**Final LHIN & Hospital Destination**
Welland Hospital	8 perinatal	2	6	-	8	4 • HHS
Norfolk General Hospital	4 perinatal	-	4	-	4	2,4 &7 • Sunnybrook, Women's College Site • St. Joseph's Health care, London ON • HHS
St. Joseph's Healthcare Hamilton	1 neonatal 7 perinatal	1	7	-	8	4 & 7 • HHSC • Sunnybrook, Women's College Site • Mount Sinai Hospital
West Lincoln Memorial Hospital	6 perinatal	-	6	-	6	2, 4 &6 • St. Joseph's Health care, London ON • HHS NHS, GNGH • Credit Valley Hospital
Grand Total	**5 neonatal 67 perinatal**	**3**	**63**	**5**	**71**	

Source: 2005/06 CritiCall data

*In the instance where HNHB LHIN becomes the final destination, it reflects a scenario where HHS could not accept the transfer, but another facility was able to provide services. As well, it reflects times when the physician may decide to keep the patient or cancelled the call.

Post Partum Services

The post partum period is significant because it represents a time of physiological adjustment for both the mother and baby at a time of social and emotional adjustment for the family and within the community.

The goals of care during the postpartum period are to: [xxiv]

- promote the physical well-being of both mothers and baby;
- support the developing relationship between mothers and baby and family;
- support the development of infant feeding skills;

- support and strengthen the mother's knowledge as well as her confidence in herself to fulfill her mothering role within her particular family and cultural situation and;
- support the development of parenting skills.

Healthy Babies Healthy Children (HBHC) is a prevention/early intervention initiative designed to help families promote healthy child development and help their children achieve their full potential. Although HBHC is a free voluntary program offered to pregnant women through local Public Health Units uptake of this service prenatally across the LHIN is lower than during the post partum. The majority of women are introduced to this program in hospital and a public health nurse follows up with the woman and newborn within 48 hours of being discharged.

The most recent HBHC provincial monitoring reports (January – December 2006) reported that seventy-nine percent of the families in the LHIN received a post-partum telephone call by a public health nurse, 49% received a home visit and a further 7% were considered for an in-depth assessment. The most common referral made by HBHC within the LHIN was to parenting programs (66%), the second most common referral made to families is to "Other community programs" (23%) demonstrating how health systems integrate with community services. Community support strategies nurture the well-being of families in the HNHB LHIN. Uniquely, in rural communities, referrals to child development and therapy programs exceeded the referrals to parenting programs. At present, there is no coordination or evaluations to determine wait times, rate of completed referrals and benefit to women and their newborns.

ARE BABIES BEING BORN HEALTHY?

Preterm Births

Preterm birth is used as a health measure of a newborn's health; babies born too early are at risk of higher rates of mortality and health problems. Preterm is defined by Health Canada as a gestational age of less than 37 weeks[xxv]. Risk factors associated with preterm birth include, multiple births, previous preterm birth, smoking, high stress, low weight gain in pregnancy[xxvi]. In 2005/06, 10.2% of all HNHB LHIN births occurred at less than 37 weeks gestational age compared to an Ontario average of 8.1%. While further research is needed to understand factors contributing to the higher rate reported for HNHB LHIN, data on multiple births by calendar year identifies that for three calendar years 2002-2004, HNHB LHIN has reported a greater number of multiple births than the Ontario average.

Table 11: Multiple Live Births by HNHB Hospitals and Ontario Hospitals for Calendar Years 2002-2004

Calendar Year	HNHB LHIN % Multiple Births	Ontario % Multiple Births
2002	3.7	3.1
2003	3.8	3.2
2004	3.9	3.2

Source: Vital Statistics, Population Health Planning Database

Neonatal Hospital Readmissions

Newborn readmission rates have been used to evaluate the quality of hospital care after birth. Policies/practices that support early discharge need to be continually monitored for their relative risk and benefit[xxv]. In 2005/06, HNHB LHIN hospitals reported that 146 newborns were readmitted within 28 days of birth (1.1%) compared to 1.5% for Ontario.

In the most recent CIHI report published in July 2007, the prevalence of low birth weight (less than 2500 grams) in the HNHB LHIN has increased from 5.3% in 2001-02 to 6.2% in 2005-06. The risks associated with low birth weight can influence readmission rates and length of stay, impacting patient flow efficiencies. Without a community-based physician coverage system in place upon discharge and community-based lab facilities newborns are at risk of poorer outcomes.[xxvii]

Intrapartum Interventions

OMCEP, in 2006, reported that Ontario had higher rates for medical intervention in the birthing process than other parts of Canada[xxii] based on 2003/04 data. HNHB LHIN medical and surgical intervention rates were reviewed for 2005/06 against Ontario average and/or other LHINs.

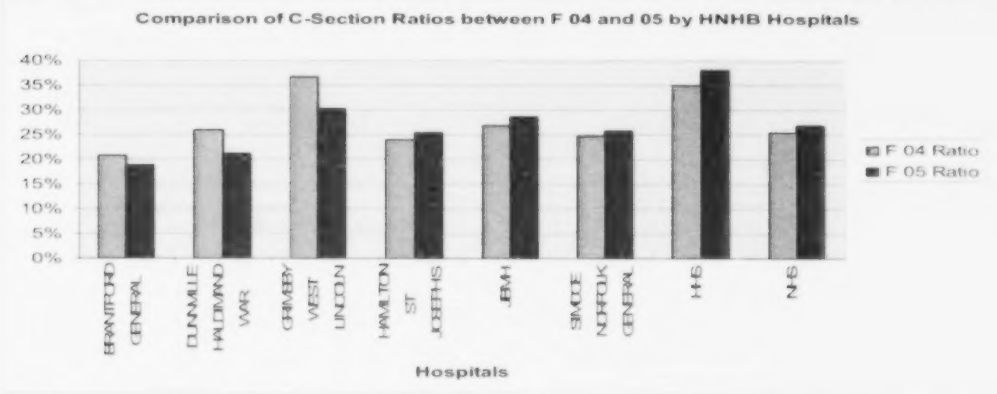
Caesarean Births

The use of caesarean sections (C-sections) as a method to deliver babies has been increasing across various populations and time [viii]. In 2004, CIHI reported that in Canada the rate of primary C-sections (women without history of previous C-section) had increased by 3% between 1998/99 and 2001/02. In 2006, OMCEP reported an Ontario C-section rate of 26.1%. A review of 2005/06 data revealed that Ontario's C-section rate has increased to 27.9%. C-section delivery is associated with various risks and benefits[viii]. Determining an appropriate C-section requires an assessment of the characteristics of the childbearing population. [xxviii]

HNHB LHIN C-section rate for 2005/06 was 28.1%. The C-section rate across Ontario LHINs ranged from 19.9% in Central West to 47.7% in Toronto Central.

Chart 6 reports the variation in C-section rates across HNHB LHIN hospitals. While data for HHSC reports a higher percent of C-sections, this may be a reflection of the higher risk profile of their population.

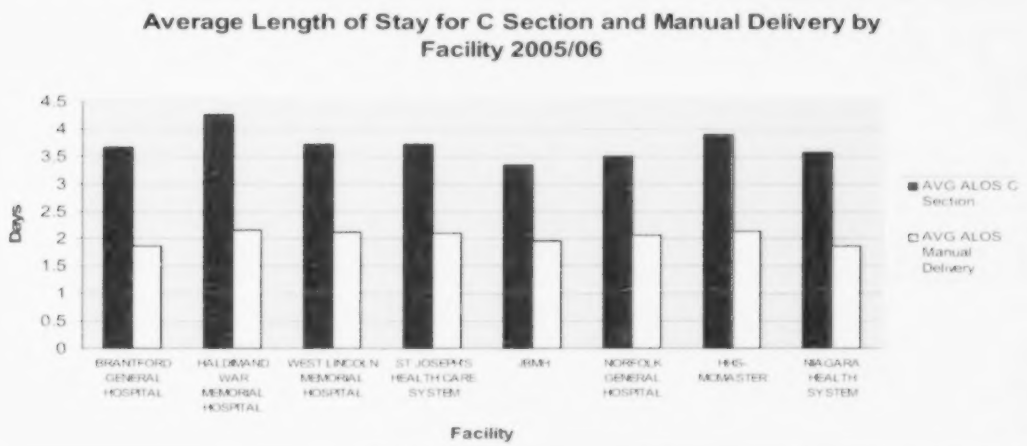
Chart 6: Comparison of C –Section Ratio between LHIN Hospitals for 2004/05 & 2005/06



Source: Population Health Planning Database, CMG 604

C-sections are associated with a higher length of stay in hospital. In 2005/06, the length of stay for vaginal delivery across HNHB LHIN hospitals was relatively consistent between 1.9-2.2 days. The length of stay for C-sections varied between hospitals ranging from 3.34–4.25 days, and was on average 1.5 days longer.

Chart 7: Average Length of Stay for C-Section and Vaginal Delivery by HNHB LHIN Hospitals 2005/06



Labour Induction:

Labour induction is an active intervention, referring to labour being induced by medical or surgical means prior to the onset of labour (in pregnant women over 20 weeks of gestation, and is associated with risks for the mother and baby. In certain situations the risk of inducing labour will outweigh the risk of waiting for labour to start (continuing pregnancy)[xxviii]. In 2005/06, HNHB LHIN reported an induction rate of 30.9% compared to Ontario average of 28.4%. The induction rate across LHINs ranged from 13.5% in Central West to 45.8% in South West. The codes included in the calculation of the induction rate are provided in Table 14.

Table 13: Percent of Inductions Reported by Ontario Hospitals in 2005/06

LHINs	% of Inductions
Erie St. Clair	40.2%
South West	45.8%
Waterloo Wellington	26.8%
Hamilton Niagara Haldimand Brant	30.9%
Central West	13.5%
Mississauga Halton	25.7%
Toronto Central	38.4%
Central	27.0%
Central East	15.4%
South East	33.3%
Champlain	30.9%
North Simcoe Muskoka	25.0%
North East	36.6%
North West	35.2%
Ontario Total	28.4%

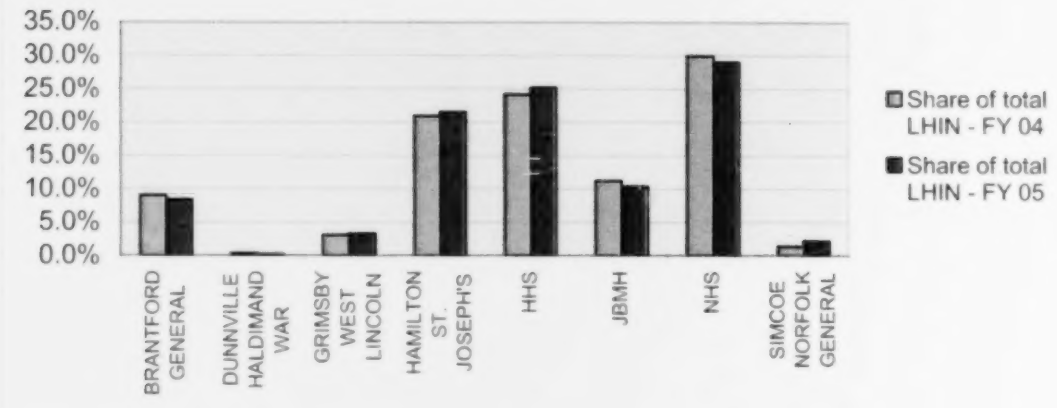
Table 14: Procedure Codes

Intervention Procedure Codes
5AC30ALI2
5AC30AN
5AC30AP
5AC30AZ
5AC30CAI2
5AC30CAZ9
5AC30CK
5AC30GUI2
5AC30HAI2
5AC30YB12
5AC30ZZ12

Source: Population Health Planning Database

Chart 8 reports the variation in induction ratios across HNHB LHIN hospitals. Niagara Health System reports the highest induction rate across LHIN hospitals for 2004/05 and 2005/06.

Chart 8: Comparison of Induction Ratio between LHIN Hospitals for 2004/05 & 2005/06



Source: Population Health Planning Database

Appendix F

DESIGNATED UNDER-SERVICED AREAS AND VACANCIES

Table 15: Designated Under-serviced Areas and Vacancies

1	Brant	4
2	Brantford	15
3	Haldimand	5
4	Burlington	4
5	Fort Erie	9
6	Grimsby	3
7	Lincoln	1
8	Niagara Falls	23
9	Niagara-on-the-Lake	2
10	Pelham	4
11	Port Colborne	6
12	St.Catharines	26
13	Thorold	5
14	Welland	15
15	Norfolk	13
	Total	**135**

Source: List of Areas Designated as Under-serviced, MOHLTC (LADAU) Summer 2007

Appendix G

KEY INFORMANT INTERVIEWS

Population

LHIN health care providers identified the several challenges that lie ahead in meeting the growing demand for maternity care including financial and human resource pressures that constrain the growth of capacity and changes in the roles and mix of health care providers that have created challenging work environments. As the LHIN population grows, it does so against a maternity care system that is strained and stretched.

The anticipated population growth and an increasingly complex population profile among women that includes, diversity, marginalized population, multiple births, etc.), may be of significant concern to health providers and decision makers who are seeking ways to ensure accessible and appropriate maternity care.

There is a particular concern expressed by health care professionals about the availability in the very near future of experienced maternity nurses and interpreters.

Diversity

Key informants working on First Nations and with Aboriginal women, expressed concerns around access to specialized services, transportation to access maternal services, the need for culturally sensitive and appropriate services. Key informants reported variation regarding access to abortion services for a gestational age greater than 11 weeks. Specific to postnatal care, hospitals may not be in all cases referring Aboriginal women to Aboriginal Healthy Babies Healthy Children programs across the LHIN.

Francophone health service providers identified that access to French language services for the continuum of maternal care needs to be increased across the LHIN and that general knowledge among health care providers of French language maternity services could improve.

LHIN maternity care experts spoke about the wide diversity of geography and population groups within the LHIN and how this diversity, including marginalized populations, needs to be highlighted and valued. The growing diversity across many communities within the LHIN creates an imperative for inclusive maternal services that acknowledge and reflect the cultural, linguistic, gender aligned, ethnic, spiritual, literacy, and broader socio-economic environment of the women to be served. The specific needs of marginalized groups, in contrast to the broader population, represent potential service and access challenges for providers who may not have resources or an appropriate level of awareness/education to adequately respond to these specific needs. Translation services, cultural liaisons, and cultural interpretive services are resources that are not consistently available across the LHIN, and where they are present they represent an additional cost for providers to incur. St. Joseph's Healthcare Hamilton reported that they have successfully adapted their maternity care to meet the needs of a vulnerable population within their catchment area.

Access to Prenatal Care

In order for women in the LHIN to have access to a range of prenatal care options in a timely manner, there needs to be greater availability of services, public education about options, access to transportation, and continuity amongst prenatal care service providers.

Without standardization of prenatal scope of service, the menu of available prenatal care services varies across the geography of the LHIN. Added to the geo-specific availability of services is the impact of transportation to services for both urban and rural women in order for them to reach the point of service entry.

Hospitals, CHCs, family doctors, public health, and community organizations can deliver prenatal care services. Because there is no clear definition amongst providers on how to best integrate and coordinate these services, there is the potential for both gaps and overlaps. The key informants signaled the need for better communication in coordinating services, amongst providers. Access and coordination between service points within the range of prenatal care is as important as the primary access to prenatal care as a whole.

Where Women Give Birth

The ability of low volume centres to sustain a maternity and newborn service was identified as a concern by LHIN experts. Low volumes make it difficult to build and maintain staff expertise in maternity services. Small services have greater difficulty recruiting and retaining staff members since maternity care must have 24 hour 365 day per year coverage. Balancing work and family commitments is often perceived to be untenable in such situations. Centralization of maternal newborn care within larger communities has accelerated over the past years. The advantages for care providers are multiple since human resources are concentrated within fewer sites. But larger centralized services are often more difficult to access because of their location and are perceived to be more impersonal. Finding a good balance between smaller "closer to home" units and larger more completely staffed units is a current struggle and invites creative solutions.

Providers

The availability of health human resources was identified by all LHIN health care experts as a current pressure to providing quality care. The shortage of family physicians combined with their decisions to withdraw from providing intrapartum care was identified as a contributing cause to the LHINs increased reliance on obstetricians. It also creates challenges for smaller hospitals, and rural communities in maintaining maternity services. The staffing shortage described was not limited to physicians but encompassed all disciplines essential to providing intrapartum care including anaesthetists, paediatricians, nurses and lactation consultants. The lack of these critical professionals was not only described as preventing the delivery of efficient maternal care but threatened the ability of centres to maintain maternal and newborn services.

Organization of Services
With regard to capacity and organization of intrapartum care several themes emerged:

System Capacity and Organization
A shortage of level II and III neonatal beds was identified by providers to impact both the tertiary centre's ability to accept transfers and level II centres to repatriate babies. The shortage of beds was felt to contribute to the perception that the tertiary centre is 'always closed' to transfers. The limited level II nursery capacity was also cited as the cause of unplanned transfers for intrapartum care resulting in women being cared for by providers unfamiliar with her history and family physicians losing income from the loss of service. System capacity was also identified as a factor for residents accessing Hamilton's high risk pregnancy service, which includes prenatal diagnosis.

The absence of a regional coordinating body for maternity and newborn care was seen as a contributing factor to the lack of a LHIN wide system approach to planning and providing maternity services. Areas that would benefit from a coordinated approach were standardization of care and practices, recognized designation of maternity and newborn care services based on the capability of the staff to care for level II babies, improved communications, establishment of a tele-network across the LHIN to provide tertiary level support to level I and II centres, reducing transfers and increasing knowledge sharing.

Relationships
Overall providers reported positive relationships with health care professionals within their own organizations. Providers in particular identified strong collaboration within Hamilton, and discussed that their sometimes limited ability to accept transfers may impact their relationships with hospitals within the region, and acknowledged that these relationships could be improved. Larger regional centres identified that they would like to strengthen their relationship with the tertiary centre, identifying the need for greater outreach planning, knowledge sharing, standardized protocols and policies.

System strengths were identified as increased use of evidence based practices and polices, reports of client satisfaction, process to care for orphaned patients, initiatives to improve knowledge transfer through conferences, establishment of processes to improve communication to referring physicians, nationally recognized model of care i.e. Hamilton's Primary Care Maternity Centre, Tsi Non:we Ionnakeratstha Ona:grahsta Birthing Unit, and providers' commitment to collaboration and new models of care.

System Challenges, (excluding issues already captured previously) were provincial recognition of the expertise of maternity care nurses, low percent of family doctors who choose to deliver babies, funding models, age of facilities, absence of standardized data to assist planning and evaluation and access to gynaecological services.

Patient Flow

A small percentage of women and babies are traveling further to receive the right care in the right place. Frustration is mounting for community hospitals trying to access the regional tertiary centre. Staff from the regional tertiary centre acknowledged that the frequency with which the tertiary centre is unable to accept referrals adversely impacts relationships with other hospitals in the LHIN. CritiCall is most utilized by Level I and Level II hospitals looking for Level III care; however, it is seldom utilized to transfer patients from a Level III to a community hospital allowing women and infants to receive care as close to home as possible.

Appendix H

REGIONAL HISTORY

Ontario Maternal Newborn programs are divided into several regions each headed by a tertiary centre. These include

- South Western Ontario Perinatal Program (SWOPP) based in London
- Child Health Network (CHN) based in Toronto
- Perinatal Partnership Program of Eastern and Southeastern Ontario (PPPESO) based in Ottawa
- Central West Obstetric and Neonatal Nurses (CWONN) based in Hamilton

The London, Toronto, and Ottawa groups are inter professional groups with a funded program and staff supported by the region. The Hamilton group consists of a voluntary unfunded group of nurses. CWONN have been meeting as a regional group 3-4 times a year since 1989. Participants are nurse mangers, directors, educators, CNSs and recently Public Health Nurses. They discuss and create common policies and procedures, address regional issues related to planning, budgets, operational issues, initiatives and mutual problem solving. They have moved forward on a number of fronts including sharing of educational packages, presentations and events among hospitals to maximize use of resources.

Ontario Maternity Care Expert Panel report (Fall 2006) recommended regional multi disciplinary programs for all areas of Ontario clustered by LHIN boundaries, a central provincial maternal newborn council, maintaining care close to home and ensuring access to levels of care, attention to human health resource issues and exploration of collaborative models of care. The Central West region would involve LHIN III and IV.

Central West Region (LHIN III and IV)
The organizers of CWONN desire to expand regional activities to include inter professional participation and organization. To facilitate this goal, CWONN funded a regional retreat March 30 2007. The HNHB LHIN was a partner in this effort. The retreat was attended by 17 nurses, 3 public health nurses, 8 Obstetricians, 5 Pediatricians, 4 Family Physicians, 1 Medical Officer of Health, 13 Administrators, 5 LHIN representatives, and 4 midwives. Participants represented Community Care (6), Midwifery care (4), LHIN (5), Academic (2) Level 1 hospitals (13), Level II hospitals (16), and Level III hospitals (13). Agreed outcomes of the retreat included:

1. Unanimous support for the creation of an inter professional regional partnership including principles of
    - equal representation by profession, by facility and community,
    - proactive behaviors related to regional issues;
    - focus on mother / baby / family continuum of care not practitioner;
    - pool resources (share resources, education, evidence-based practice)
    - promote EBP, develop standards of care, integration, seamless care

2. Participation in the Niday database by regional hospital and midwifery practices so data can define issues, problems

3. Funding for the group should be supplied by the regional partners (eg: administrative support)

4. Need for identification of a leadership model (Mission, Vision, Values and clear short term deliverables)

5. Identified clinical concerns (in order of priority)
   a. Define levels of hospital – smoother care, better use of resources, support each other
   b. Share procedures (what do we have now) and educational resources – what are top 5
   c. OVER RIDING – need good communication

Following the retreat, a regional planning committee moved forward with small group activities to create a regional fetal fibronectin practice; develop a leadership and funding model for the partnership and plan for a newsletter and a Spring 2008 follow up retreat. As of August 2007, all hospitals within LHIN III and IV are entering Niday data. As well, the MOHLTC has funded Niday co-ordinator positions and Central West will have a full time regional co-ordinator. Postings for this position are in progress.

Appendix I

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ENDNOTES

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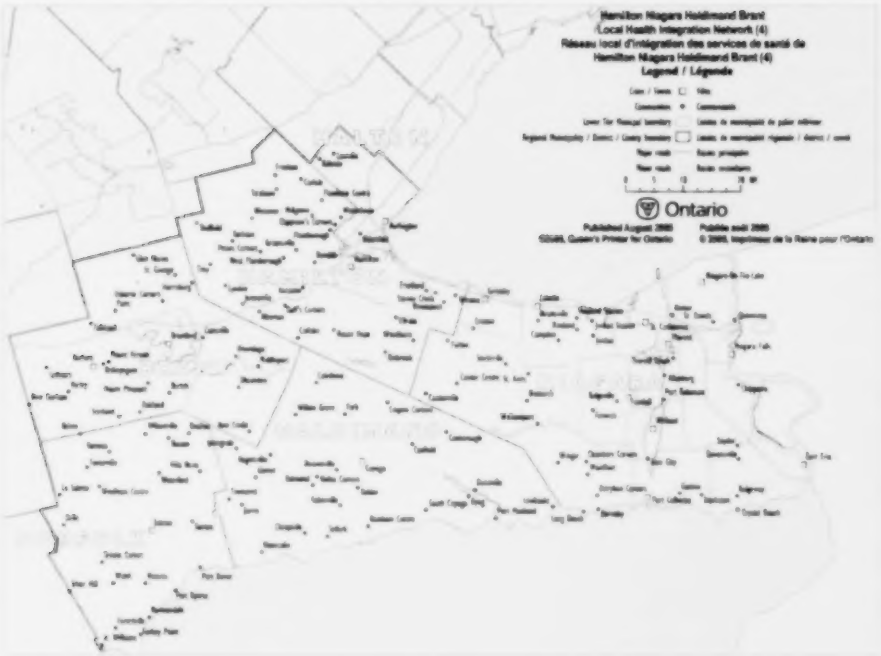
Hamilton Niagara Haldimand Brant
LOCAL HEALTH INTEGRATION NETWORK

RÉSEAU LOCAL D'INTÉGRATION DES SERVICES DE SANTÉ
de Hamilton Niagara Haldimand Brant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